



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/827,760	04/06/2001	Harold L. Simonsen	528-009766-US(PAR)	6115
7590	09/27/2004		EXAMINER VOLPER, THOMAS E	
Geza C. Ziegler Perman & Green, LLP 425 Post Road Fairfield, CT 06430			ART UNIT 2665	PAPER NUMBER

DATE MAILED: 09/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/827,760	Applicant(s) SIMONSEN ET AL.	
	Examiner Thomas Volper	Art Unit 2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Drawings

1. The drawings are objected to because they contain informal, handwritten labels. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claim 10 is objected to because of the following informalities: “the communications channel” in lines 1-2 should be changed to --the communications link--.

3. Claim 12 is objected to because of the following informalities: “operate a high data rates” in line 10 should be changed to --operate at high data rates--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-6, 8, 9 and 12-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson, Jr. et al. (US 2002/0080024) in view of Dutta et al. (US 5,982,813).

Regarding claims 1, 5, 12 and 17, Nelson discloses a central node adapted to transmit information over a broadcast link to at least one remote node, and a time division multiple access link to convey information from the remote node to the central node, the link including a first channel to provide management functions for the broadcast link and time division multiple access link, and a second channel adapted to operate at high data rates and to meet bandwidth needs of individual remote nodes (paragraphs [0046]-[0059]). Nelson fails to expressly disclose using a multi-phase shift key waveform to modulate the information on the time division multiple access link. Dutta discloses a wireless communication system that uses MPSK, wherein the power and modulation format are selected to assure a ratio of signal energy to noise energy that is high enough to guarantee a minimum number of bit errors at a receiver (col. 3, line 55 – col. 4, line 5). At the time the invention was made, it would have been obvious to a person of

Art Unit: 2665

ordinary skill in the art to use MPSK to modulate the information being transmitted on the time division multiple access link of Nelson. One of ordinary skill in the art would have been motivated to do this in order to provide flexibility in the order of modulation so that the bit error rate of the link would be minimized.

Regarding claims 2-4, Nelson discloses a Link Quality Management (LQM) channel for transferring link management information to each remote user that is used to maintain the broadcast link and the communications link (paragraph [0048] and [0064]).

Regarding claims 6, 8 and 9, Nelson discloses a pair of heartbeat channels in the reverse communications link that act effectively as one channel, and provide slot timing, communications link synchronization and slot management functions (paragraphs [0084] and [0085]). Nelson also discloses at least one traffic channel for conveying high speed user data on the reverse link (paragraph [0049]). Fig. 4 shows that when data is transmitted on one of the reverse traffic channels, it transmits at a faster rate than on one of the heartbeat channels. As mentioned above, it is obvious to use Dutta's feature of selecting a high enough signal to noise ratio to minimize bit errors. This meets the limitation of transmitting on a high signal-to-noise ratio channel.

Regarding claim 13, Nelson discloses a pair of heartbeat channels on the reverse link from a field unit to a base station, in addition to traffic channels, that provide a synchronization function (paragraph [0053]). These channels meet the limitation of an embedded tracking channel, as they are part of the reverse link. Also, as described above, Dutta discloses a method of selecting a high enough signal to noise ratio to minimize bit errors. This meets the limitation of transmitting on a high signal-to-noise ratio channel. It was stated above that it would be

Art Unit: 2665

obvious to use MPSK to modulate the time division multiple access link (reverse link) of Nelson. Thus the heartbeat channels of Nelson in view of Dutta provide for embedded high signal-to-noise tracking channels.

Regarding claim 14, Nelson discloses providing a dedicated conduit for transmitting user data from a field unit to the base station (paragraphs [0114]-[0115]).

Regarding claims 15, 16 and 18, Nelson discloses that the reverse link traffic channels support variable rate data, and may be adjusted on a slot by slot basis (paragraphs [0049] and [0054]).

Regarding claim 19, Nelson discloses dynamically assigning one or more slots to a new remote node entering the network (paragraphs [0131]-[0134]).

6. Claims 7, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson, Jr. et al. (US 2002/0080024) in view of Dutta et al. (US 5,982,813) as applied to claims 1-6, 8, 9 and 12-19 above, and further in view of Kinnunen et al. (US 6,707,859).

Regarding claims 7 and 10, Nelson in view of Dutta discloses a first channel and a second channel wherein the first channel is a high signal-to-noise ratio channel and the second is a wideband channel. This combination fails to expressly disclose that there is only one second channel, and that the first and second channels are in an orthogonal relationship. Kinnunen discloses a channel structure format comprising one data channel and one control channel in a wireless uplink (Figure 4). The data and control channels are transmitted in parallel in I and Q branches of a channel pair, i.e. QSPK modulation (col. 5, lines 44-48). This format of modulation produces an orthogonal pair of channels. At the time the invention was made, it

Art Unit: 2665

would have been obvious to a person of ordinary skill in the art to use only one reverse link traffic channel and to use QPSK modulation rather than MPSK. One of ordinary skill in the art would have been motivated to assign only one reverse traffic channel to a particular field unit in order to reserve resources for other field units in a crowded and busy network. One of ordinary skill in the art would have been motivated to use QPSK instead of MPSK to reduce the complexity of the system when only one traffic channel was being used by a particular field unit.

Regarding claim 11, Nelson discloses that the reverse link traffic channels support variable rate data, and may be adjusted on a slot by slot basis (paragraphs [0049] and [0054]).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Esteves et al. (US 6,687,510) Methods and Apparatus for Power Allocation on a Reverse Link Power Control Channel of a Communication System

- I et al. (US 5,671,218) Controlling Power and Access of Wireless Devices to Base Stations which use Code Division Multiple Access

- Hottinen et al. (US 2003/0073410) Data Transmission Method and Radio System

- Varanasi (US 6,219,341) Method for Bandwidth Efficient Multiple Access Wireless Communication

- Zhang et al. (US 2002/0054578) Channel and Quality of Service Adaptation for Multimedia over Wireless Networks

Art Unit: 2665

- Ozluturk et al. (US 2002/0027946) Method for Adaptive Reverse Power Control for Spread-Spectrum Communications

8. Any inquiry concerning this communication, or earlier communications from the examiner should be directed to Thomas Volper whose telephone number is (571) 272-3151. The examiner can normally be reached between 8:30am and 5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached at (571) 272-3155. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

Thomas E. Volper



September 23, 2004



HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600